Lecture # 6

INTRODUCTION TO PSYCHOLOGY

Behavioral Approach:
The psychological model that focuses on the overt, observable, behavior. The model grew out of the rejection of psychology’s early emphasis on the inner working of the mind, suggesting instead that observable behavior should be the focus of the field. John B. Watson was the first person that advocated the behavioral approach. This is a psychological approach that considers the relationship between behavior and environmental stimuli as the focus of study; observable behavior is what psychology should be studying, understanding, and explaining.

This approach dominated psychology for most of the 20th century

What do the Behaviorists Study?
They specifically study:
- Observable/overt behavior
- Specific measurable responses
- How particular types of behaviors are controlled by particular types of environmental stimuli

Method of investigation: Data are typically collected under controlled laboratory conditions, employing technological assistance

What the Behaviorists Are Not Interested in:
They are not interested in:
- Unconscious
- Inner motivation
- Biochemical processes
- These and all other states, which are not being observed with the naked eye or cannot be evaluated.

Behaviorist Analysis
- Done for seeing and establishing the relationship between the stimulus and response/behavior.

Three step approach:
- The antecedent environmental conditions: are analyzed. i.e., the conditions preceding the action/response/behavior, and that lay a ground for it.

- The behavioral response is studied: study of the action or behavior that is to be understood, described, predicted, and controlled.

- Observable consequences are explored: the impact resulting from the target behavior i.e. how it affects the environment or other people.

Basic Terminology:
- Stimulus: A physical energy source that has an effect on a sense organ, thus producing a response.
- Response: The action, behavior, or reaction triggered by a stimulus.
- Environment: External factors, variables, conditions, influences, or circumstance affecting one’s development or behavior.
- Variable: A behavior, factor, setting, or event that can change/vary in amount or kind.
Learning: A relatively permanent change in behavior that takes place as a result of practice and/or experience.

Edwin L. Thorndike: (1874–1949)
- American psychologist, whose thinking is thoroughly associationistic. He was a functionalist in his emphasis on the utilitarian aspect of psychology. According to him, psychology is about the stimulus-response connections. He was of the view that behavior can be analyzed into associations. He said that the behavioral processes are quantifiable. Believed that behavior was explicable on the basis of nothing but stimulus-response connections inherited and acquired.
- Initial work: in 1898 (published dissertation) studied problem solving in animals. Tried to analyze the conditions under which animals learn.
- Focus of the study: the relationship between the animals’ response and their consequences.
- Main finding: The consequence of any response determines if the response will be repeated in future or not: “The Law of Effect”

The Law of Effect
Any response that leads to an outcome that is satisfying for the organism is likely to be repeated; a response leading to an outcome that is not satisfying is not likely to be repeated

Association by Contiguity
- The organism forms an association or connection between the response and its consequences. For it to be effective, the response and the outcome have to be closely linked -- both in time and space
- The theory drew attention towards the significance of reward and punishment in learning new behaviors

Criticism against Thorndike’s Approach
- It was not clear about what exactly ‘Satisfying’ meant.

Early Behaviorism
   - American psychologist with a remarkable career.
   - Initially trained in introspection at the University of Chicago but found it extremely vague and mentalistic.
   - He became interested in experimental research with animals.
   - He completed his Ph.D. on that in three years, being the youngest such graduate.
   - Taught at the University of Chicago for four years, joined John Hopkins as full professor and soon became chairperson of the psychology department.
   - Gave a revolutionary, pragmatic approach often known as ‘Radical Behaviorism’.
   - He and his followers believed and advocated that psychology should depart from the study of unconscious and the mind because they could not be verified or tested scientifically.
   - Observable behavior is all that psychology should be looking at.
   - Environment and external world (environmental stimuli) is what shapes and determines behavior.
   - Learning is what matters in what a person is, and not the inborn instincts, impulses, drive, id, or unconscious motivation. An understanding of learning will encompass all aspects of personality.
   - Mentalist concepts, not grounded in reality, should be rejected.

Impact of Learning Experience
“Give me a dozen healthy infants, well formed, and my own specified world to bring them up in, and I’ll guarantee to take any one at random and train him to become any type of specialist I might select.
Learned Fear: The Case of “Little Albert”

- 1920: Developing Fear; Watson and Rosalie Rayner
- Eleven-month-old Albert who enjoyed playing with a cute white rat was made afraid of it by linking a loud frightening sound with the appearance of the rat.
- The experiment was further expanded and Watson and Rayner demonstrated that the fear of the rat could be generalized to all sorts of stimuli: a dog, a cotton ball and a Santa Clause.
- Watson and Rayner could not get a chance to undo the learning as the child’s mother removed him from the hospital.

Issues stemming from Little Albert’s Experiment:
- Unethical treatment of Albert, that too without the advised consent of his mother.
- Watson contradicted his own earlier assertion that early childhood emotional experiences can affect a person for a lifetime.

Classical Conditioning

- Why are children scared of darkness?
- Why some children jump with joy at the sight of a bear and some start screaming in fright?
- Why does one coming from abroad start feeling happy at the very sight of his parents’ home?
- Why does one start feeling bad at the thought of going to a dentist?

The answers to all these questions can be found in the classical conditioning approach.

Classical Conditioning: The History

- Ivan Pavlov 1849-1936: Russian physiologist and pioneer of classical conditioning.
- In the later years of the 19th century studied the basic process of digestion and won Nobel Prize for that in 1904.
- The focal point was the salivation reflex in dogs.
- It was already known that the dogs would salivate if food powder were led into their mouths, as it was a ‘reflex’.
- The dogs salivated every time the food powder was presented.
- He observed that after some time, the dogs at times salivated just before food was put into their mouths. They also salivated at the sight of the food, and even at the sight of the lab assistant who brought food for them.
- This is where the concept of classical conditioning emerged.

Classical Conditioning: The Theory

- Is a type of learning in which a previously neutral stimulus starts eliciting a response that was originally attached to a natural stimulus, because the neutral stimulus has been closely associated with the other stimulus.

Basic Terminology in Classical Conditioning

i. Reflex:
- An automatic, unlearned response resulting from a specific stimulus.

ii. Un-Conditioned Stimulus (UCS):
- A stimulus that elicits a response reflexively and reliably.

iii. Un-Conditioned Response (UCR):
- A natural, reflexive, reliable, response of the UCS.

iv. Conditioned Stimulus (CS):
o A primarily neutral stimulus which, when paired with the UCS, starts evoking a response (different from its natural response) and the same as UCR.

v. **Conditioned Response (CR):**
o After conditioning, the CS begins to elicit a new, learned response. i.e. CR.

**Pavlovian Classical Conditioning:**
The following diagram explains the classical conditioning model:

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**Little Albert’s Case**

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Extensions of the Main Classical Conditioning Model

There are a number of other variations and extensions of this model, which will be discussed in detail in the section on learning. Here, we will just name them:

- Extinction
- Spontaneous recovery
- Stimulus generalization
- Stimulus discrimination

Applications of Classical Conditioning in Everyday Life

- Negative emotional responses: fears, phobias—fear of lizards, dark places, school phobia
- Positive emotional responses: Feelings of relaxation, and happiness --- thinking of going on a holiday
- Advertising: Associating model with the product
- Psychotherapy: Systematic desensitization, aversive therapy

Operant Conditioning

- Why do teachers give stars on children’s workbooks?
- Why do parents clap happily when their child utters the first words that nobody else can decipher?
- Why do manufacturers of products announce prize schemes for the consumers of their products?

The answers to all these questions can be found in the “Operant Conditioning” approach.

Operant Conditioning

- Type of learning in which a voluntary response becomes stronger or weaker, depending on its positive or negative consequences
- The organism plays an active role and “Operates” on environment to produce the desired outcome

Burrhus Frederic Skinner (1904-1990)

- American Psychologist and the founder of Operant Conditioning.
- 1931: Received his Ph.D. from Harvard.
- During World War II, he conducted research on teaching pigeons to direct missiles to targets while flying in nose-cone. However the idea did not materialize.
- 1948: Appointed as full professor at Harvard.
- While a graduate student at Harvard he started thinking on Operant Conditioning lines.
- His theory is somewhat similar to Thorndike’s, but it was actually Watson who impressed him.

The Typical Skinnerian procedure:

- A special apparatus usually known as skinner’s box is used.
- Laboratory animals learn to press a lever so that food is delivered to them.
- The environment is controlled.
- The animal operates on the environment and as a result of its behavior it may be rewarded or punished. Food is the reward.
- The consequence determines if the response will be repeated or not.

Shaping

Successive approximations of a required / desired response are reinforced until that response is fully learnt:

- In the beginning each and every success is reinforced with a reward, no matter how small the success.
Once the desired response is learnt the reinforcer immediately follows it, every time it happens. Once learnt the behavior, in many cases, the organism may not need reinforcement any more, since many behaviors are self-reinforcing e.g. learning to play a musical instrument. **Acquisition**: Initially the response rate following reinforcement may be slow but at one stage it increases to the maximum. This is acquisition. **Extinction**: If reinforcement is withheld the response rate decreases and finally no response is shown. This is extinction.

**Reinforcement**

1. **Reinforcement**: Increasing the probability that preceding behavior will be repeated through a stimulus.
2. **Positive Reinforcer**: A stimulus whose introduction brings about an increase in the preceding response.
3. **Negative Reinforcer**: A stimulus whose removal reinforces and leads to a higher likelihood that the response bringing about this removal will be repeated.
4. **Punishment**: An unpleasant or painful stimulus whose introduction following a certain behavior decreases likelihood that the behavior will occur again.

**Cognitive Approaches to Learning**: The approaches that focus upon the thought processes underlying learning. Latent Learning and cognitive maps (Edward Tolman); Tolman talked about the ‘cognitive maps’; it is not necessary to have an association between stimulus and response, a person can learn without showing any apparent response; in other words learning and performance are not the same. Social learning / Observational learning and Modeling (Albert Bandura): a major portion of our learning is based upon learning by observation.

**Applications of Operant Conditioning in Everyday Life:**

- Child rearing
- Classroom management
- Teaching of skills
- Animal taming
- Advertising
- Psychological intervention and Psycho-therapy: behavior modification, assertiveness training, token economy